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(Bulletin Bimensuel de la Soc. Nat. D'Acclimatation de France, December 5, 1888).

In this pamphlet of thirty-one pages the authors treat of the following edible plants: *Aponogeton distachyum* and ten other species of the genus; *Ouvirandra fenestralis*; *Trapa bicornis*, *T. bispinosa* and *T. natans*, var.; *Nelumbium speciosum* and *N. luteum*; *Euryale ferox*; *Nuphar multisepalum*; *Nymphæa Lotus*, *N. edulis*, *N. rubra*, *N. cœrulea* and *N. Rudgeana*; *Eleocharis tuberosa*; *Sagittaria sagittæfolia*, *S. Sinensis* and *Ænanthe stolonifera*. Of these the synonyms and common names are given with a short description and notes on habitat, cultivation, uses and geographical distribution. In many cases they have been cultivated or become naturalized in France, and the information given is full and reliable, in others, it is quoted or is meagre. The authors desire for cultivation specimens of *Sagittaria variabilis*.
E. G. B.

Histoire d'un nouveau Légume. A. Paillieux et D. Bois. (Rev. Sci. Nat. Appl., Nos. 12, 13, 1889).

The tubercles of *Stachys affinis*, Bruge, have been introduced into cultivation by M. Paillieux, who considers them the third new vegetable of the century and has done all in his power to create a demand for them in the market under the name of "Crosnes du Japon." They have been used for pickles and salads and are recommended for invalids and those of delicate digestion, because of the large percentage (.76) of hydro-carbons in the form of galactane. The flavor and nature of these rhizomes seems to be similar to that of the artichoke. The plant is native of eastern Asia and known also as *S. tuberifera*.

Index to Recent American Botanical Literature.

Algæ of Maine—The Freshwater. William West. (Journ. Bot. xxvii. 205-207).

One new species, (*Sphærozosma Aubertianum*), and two new varieties, (*Micrasterias pinnatifida*, Ralfs., var. *trigona*, and *Staurostrum angulatum*, W. West, var. *subangulatum*), are described.

Algæ of the West Indian Region—Catalogue of the Marine. Geo.

Murray. (Journ. Bot. xxvii. 237-242 ; 257-262 ; 298-305, concluded).

In addition to the catalogue of species, a table showing the distribution and a list of authorities is appended.

Atacama—*Botanische Reise nach der Provinz in* 1885. R. A. Philippi. (Verhand. Deutsch. wiss. Verein Santiago, 1888, 214-221).

Bald Cypress—*The knees of the ; a New Theory of their Function*. R. H. Lamborn. (Garden and Forest, iii. 21, 22, fig. 4).

The much discussed question as to the function of the "knees" of *Taxodium distichum* here receives another contribution. The author advances the very plausible theory that they serve to strengthen the angle where the roots change their direction from a horizontal to a more or less vertical one. As these roots undoubtedly act in the capacity of anchors to hold the trees steady in the soft and yielding soil where they grow, the above hypothesis seems entirely within reason. The significant fact is mentioned that the Bald Cypress seldom, if ever, is known to be prostrated by the wind, in spite of its apparently insecure place of growth. It is also suggested that the knees may serve the purpose of arresting drift material, and holding it until it decays and becomes food for the roots of the trees to absorb. The author considers the theory that they are aerating organs as yet unsubstantiated.

Bulletin of Miscellaneous Information—*Royal Gardens, Kew*, 1889. (8vo. pp. 306. London, 1889).

Contains much that is of interest to American botanists. Under the caption *Coca* are full descriptions, with figures, of *Erythroxylon Coca* and *E. Coca*, var. *Novo-Granatense*, and brief notes upon other species of the genus. Two memoranda are given upon the Yam Bean (*Pachyrhizus tuberosus*), one of which is illustrated. The short-podded Yam Bean (*P. angulatus*) is also figured. *Zizyphus chloroxylon*, the Jamaica cogwood, is figured, and its bibliography given. Considerable space is occupied by the description of the economic values of *Attalea funifera*; *Cinchona*, *Agave rigida*, var. *Sisalina*, and several others. In the list of hardy annual and perennial herbaceous plants which have perfected seeds at the Gardens are a large number of our

well-known North American species, and the same may be said of their list of newly-introduced garden plants, among which may be noted *Amelanchier alnifolia*, *A. oligocarpa*, *Antirrhinum Nuttallianum*, *Aquilegia longissima*, *Camassia Cusickii*, *Convolvulus Californicus*, *Erythronium Hendersonii*, *Oxybaphus Californica*, *Smilax rotundifolia*, *Vitis indivisa*, etc. Under the heading, "Guide to the Botanical Literature of the British Empire," will be found lists of the works relating to, or in which reference is made to the botany of the British Possessions in the Western Hemisphere—a very useful compilation.

Champignons de Venezuela et principalement de la Region du Haut Orénoque recoltés en 1887 par M. A. Gaillard. N. Patouillard and A. Gaillard (Soc. Mycol. France iv. Fasc. 2, 7-46, Pl. VI-XIII; from Bot. Centralb. xxxix. 121).

Chenes de l'Amerique septentrionale en Belgique. J. Houba (8vo. pp. 329, Hasselt, 1887).

Cottonwood. (*Populus monilifera*, Ait.) *Observations on the*, Albert F. Woods. (Bull. No. 11, Agric. Exp. Sta. of Neb. 93-97).

An attempt is here made to differentiate between the male and female trees, by other than the usual sexual characteristics. The tables of observations on times of leafing and defoliation and number of lateral and terminal buds are not devoid of interest, and the entire article shows considerable care in its preparation. but the net results may be best stated in the author's own words, viz.: "There are therefore, no observable secondary sexual characters, and it is safe to say that the sex of cottonwoods cannot be determined until they begin to bear fruit." It should be remarked, however, that the author does not class the appearance and dropping of leaves as a *secondary* characteristic. The fact that the female tree is the last to leaf and the first to drop its leaves, is considered as due to the expenditure of vital force in perfecting its fruit, hence it is a *primary* characteristic! It seems as if considerable latitude might be given to the definition of primary characteristics, and their number be greatly increased under such a ruling.

Cypress.—The Deciduous. (Garden and Forest, iii. 2, Fig. 2).

Contains a discussion of "knees" and other phenomena in

connection with *Taxodium distichum*, and a characteristic view of a swamp in Southern Indiana.

December.—*A mild.* (Garden and Forest, iii. 11).

Several contributions under this heading announce the flowering of plants out of season, from many widely separated sections of the country. Similar communications appear in the following issue, and finally the editors are obliged to say: "We have received many letters, for which we have no further space, from correspondents who give lists of flowers blooming out of their season. But with bluets (*Houstonia cærulea*) flowering by New England roadsides, *Anemone blanda* opening in the suburban gardens of this city, and dandelions starring the turf everywhere the day after New Years, it is safe to pronounce this an exceptional winter."

Economic Fungi.—*Announcement and Contents of Fascicle.* A.

B. Seymour and F. S. Earle. (Cambridge, Mass., January 1, 1890).

The announcement is made that a series of fascicles of fungi of economic importance are to be prepared, to illustrate the diseases of noxious and useful plants. Each fascicle is to be given a distinctive character, and will be prepared either loose or in book form. Fascicle I, containing 50 species, is now ready for distribution, at \$3.00 or \$3.50, according to method of preparation.

Euphorbiaceous Plants collected by Mr. T. S. Brandegee in 1889 on the mainland of Lower California and the adjacent islands of Magdalena and Santa Barbara. C. F. Millspaugh. (Proc. Cal. Acad. Sci. (II), ii. 217-230; reprint, issued December 17, 1889).

In this "Contribution to North American Euphorbiaceæ, I," Dr. Millspaugh enumerates 41 species and varieties, of which the following are described as new: *Phyllanthus Brandegei*; *P. ciliato-glandulosus*; *Croton Magdalenæ*; *Argythamnia Brandegei*; *A. serrata*, var. *Magdalenæ*; *A. sericophylla*, var. *verrucosemina*; *Acalypha Comunduana*; *Bernardia viridis*; *Euphorbia Purisimana*; *E. Brandegei*; *E. pediculifera*, var. *minor*; *E. conjuncta*; *E. involuta*; *E. geminiloba*; *E. Comunduana*; *E. heterophylla*, var. *eriocarpa*. There are also critical notes on

many other species. If this order serves as an index to the rest of Mr. Brandegee's collection, it must be wonderfully rich in novelties. N. L. B.

Fittonia argyroneura. W. H. G. (Garden xxxvi, 527, illustrated).

Flora of the Northern Shores of America.—Remarks on, with Tabulated Observations made by Mr. F. F. Payne, on the Development of Plants at Cape Prince of Wales, Hudson Strait, during 1886. Geo. Lawson. (Trans. Roy. Soc. Canada; Sec. iv. 1887, reprinted).

In the list of plants collected, numbering 66 species, will be found many which are familiar to all who have collected in the Northern United States and in our eastern mountain regions, such as *Vaccinium Vitis-Idæa*, *V. uliginosum*, *Diapensia Lapponica*, *Pyrola minor*, *Rhododendron Lapponicum*, *Salix herbacea*, *Saxifraga oppositifolia*, etc., and a few which are known at the sea level in our own neighborhood, such as *Cerastium vulgatum*, *Honkenya peploides*, *Eriophorum polystachyon* and *Cystopteris fragilis*. *Flowers and Insects. III.* Chas. Robertson. (Bot. Gaz., xiv, 297-304).

Notes are given upon the habits and effects of bird and insect visitors upon *Nelumbo lutea*, *Dentaria laciniata*, *Geranium maculatum*, *Impatiens aurea*, *I. biflora*, *Staphylea trifolia* and *Ceanothus Americanus*.

Fungi of Economic Interest.—Notes on; Observed in Lancaster County, Nebraska, during the summer of 1889. Roscoe Pound. (Bull. No. 11, Agric. Exp. Sta. of Nebraska, 83-91).

The author states that "the popular idea, and one which one constantly encounters in conversing with those who suffer from the damage done by these fungi, namely, that they are more abundant in wet seasons than in dry ones, has not been confirmed by my observations." Three lists are given, one of injurious fungi, numbering 64 species; one of those which are harmless so far as observed, numbering 5; and one of beneficial fungi, numbering 6. Under the latter heading the intention is evidently to describe the species which are beneficial to economic botany—not to the hosts. Thus "*Botrytis tenella*, Sacc. On "June

Bugs" (*Lachnosterna*) and several caterpillars. Often kills large numbers of them."

Garden Vegetables.—History of. E. L. Sturtevant. (Am. Nat. xxiii. 665-677).

We are pleased to again welcome the author's contributions to this subject. In this paper he treats of the Lima Bean, (*Phaseolus lunatus*, L.), Lovage, (*Ligusticum levisticum*, L.), Malwows, (*Malva crispa*, L.), Marigold, (*Beta vulgaris*, var.), Martynia, (*Martynia proboscidea*, Glox., and *M. lutea*, Lindl.), Melon, (*Cucumis melo*, L.), Mint, (*Mentha viridis*, L.), Mugwort, (*Artemisia vulgaris*, L.), and Mustard, (*Sinapis alba*, L., *S. nigra*, L., *S. brassicata*, L., *S. Chinensis*, L., and *S. Pekinensis*, Lour). *Goniograptus Thureani*, McCoy, from the Levis Formation.—*Additional Notes on.* Henry M. Ami. (Can. Rec. Sci. iii. 502, 503, illustrated).

Grasses and Forage Plants of the United States, and such Foreign Kinds as have been Introduced.—The Agricultural. George Vasey. (Special Bull. Bot. Divn. U. S. Dep't Agric., Washington, D.C., 1889).

This profusely illustrated report begins with an account of the grasses, 99 of which are figured. Amongst the forage plants other than grasses may be noted *Opuntia Engelmanni*, *Erodium cicutarium*, *Eurotia lanata*, besides the *Trifoliums*, *Medicagos*, and other allied plants, all figured. Excellent plates are also given, under the heading "General Description of Grasses," of roots and rhizomes; sheaths, ligules and blades; inflorescence and dissections of flowers.

Hickory Matter.—In the. N. L. Britton. (Garden and Forest, ii. 621, 622). A communication, with editorial comment.

Palæontology of the Plains, No. 1—Contributions to the. F. W. Cragin. (Bull. Washburn Coll. Lab. Nat. Hist., ii. 65-68).

Cycadoidea munita is described as a new species, intermediate between *C. megalophylla* and *C. microphylla*.

Relation of the Flora to the Geological Formation in Lincoln County, Kentucky—The. Harry A. Evans. (Bot. Gaz. xiv. 310-314).

This is a contribution along a line of investigation to which too little attention has been paid. The relations between any

geological formations and their accompanying floras are of value and are often of unexpected interest. The author is working in a field of research which ought to bring forth good results.

Rusts and Smuts of Nebraska—A Preliminary Enumeration of the. (Bull. No. 11, Agric. Exp. Sta. of Neb., 37-82).

One hundred and nineteen rusts and twenty smuts are enumerated, to which is appended an index to all the host plants mentioned.

Sequoia—The Great. Chas. H. Shinn. (Garden and Forest, ii. 614-615).

The author here gives the early history of the discovery of the "big trees" and the rapid rate at which they are now being destroyed for commercial purposes.

Smut in Oats—Preliminary Report on. (Bull. No. 8, Kans. State Agric. Coll. Exp. Station, Oct. 1889).

Ustilago segetum, (Bull.) Ditm. is described and figured, as is also the striking smut, *Tilletia fætens*, (B. and C.) Trel. which affects wheat.

Smut of Indian Corn—The. C. E. Bessey. (Bull. No. 11, Agric. Exp. Sta. of Neb., 25-35, figs. 8 and 9).

Ustilago maydis is figured.

Smut of Wheat and Oats—The. J. C. Arthur and Chas E. Bessey. (Bull. No. 11, Agric. Exp. Sta. of Neb., 1-23, figs. 1-7). *Tilletia fætens* and *Ustilago segetum* are figured.

Station Botanists at Washington—The. Byron D. Halsted. (Bot. Gaz. xiv. 305-309).

This is the report of the Secretary of the Botanical Committee of the Association of American Agricultural Colleges and Experiment Stations, for the meeting held at Washington, D. C., November 12-15, 1889.

Sugar Producing Plants. Wilford Skaife. (Can. Rec. of Sci. iii. 455-475).

An historical account of sugar-making from the earliest times, the plants used and methods employed.

Theobroma cacao. (Le Nat. Canadien, xix. 113, fig. 15).

Ueber Brasilianische Kletterstraucher. H. Schenck. (Verhand. Naturw. Verein der Rheinl., 1889).

Viburnum pauciflorum. C. S. S. (Gard. and Forest, iii. 4 fig. 1).

Wet Mountain Valley, Colorado—Contributions Toward a List of the Fauna and Flora of. T. D. A. Cockerell. (West Am. Sci. vi. 153-155).

In this contribution the author lists thirty-one Algæ, nine Pteridophyta and four Gymnospermæ.

Proceedings of the Club.

The annual meeting was held Friday evening, January 14th, 1890, the Vice-President in the chair, and 21 persons present.

Prof. Byron D. Halsted, Mr. John K. Small, Miss Anna M. Vail, and Mr. F. von Wilmowsky were elected Active Members.

The deaths of Mr. James Hogg and Dr. W. DeForest Day, two of the incorporators of the Club, were announced by the Secretary, and a committee was appointed to draw resolutions expressive of the sentiments of the Club.

Dr. Rusby, on behalf of the Field Committee, read a final report of the season's work.

Mr. Hollick, Secretary of the Botanic Garden Committee, read a report of progress. The Committee was continued.

Reports of the officers were read and accepted. The editors presented the following

SPECIAL REPORT ON THE BULLETIN.

On the completion of the 20th year of publication of the BULLETIN the Editors consider it desirable that a statement of the progress of that journal from its beginning should be publicly made, as well as of its present prospects and needs. While the main facts of its history are familiar to some of the older members to those who have recently come into the Club they will be new and will therefore be of especial interest.

The first number was published in January, 1870, consisting of four pages issued by Mr. William H. Leggett. While bearing the name BULLETIN OF THE TORREY BOTANICAL CLUB, it was actually a private venture on the part of that earnest and enthusiastic botanist, for at that time the Club had no legal organization. Mr. Leggett stated in his salutatory that its object "was primarily to form a medium of communication for all those interested in the Flora of this vicinity and thus to bring together and fan into a flame the sparks of botanical enthusiasm at present too much isolated,